



NETWORKS FAQ

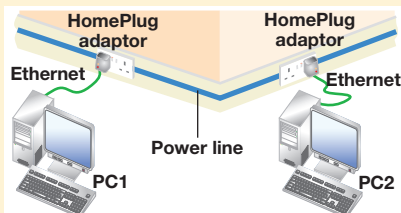
Q Please can you tell me how powerline networking works?

A Powerline networking uses existing power cables and the HomePlug standard to send data, rather than using wireless or dedicated network cables. There are clear challenges in using power cables to transmit data, not least because the power causes interference.

The technology works by plugging dedicated adaptors into power sockets. These adaptors use Orthogonal Frequency Division Multiplexing (OFDM), also used in ADSL and 802.11g. It splits data into a range of sub-carrier data channels. HomePlug uses 84 data channels in the frequency band between 4.5 and 21MHz. It has advanced error correction so power bursts can be corrected.

Data transmission rates are limited by the quality and length of wiring. HomePlug works best in a home environment, as the large number of sockets in offices slows down the technology.

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▲ The HomePlug standard means you can use your existing power lines for a home network

HOTLIST WIRELESS ROUTER

BUFFALO AirStation G54 High Power

RATING ★★★★★

PRICE £67 inc VAT

SUPPLIER <http://uk.insight.com>

DETAILS www.buffalo.co.uk

Buffalo's High Power router uses brute force signal strength to give the fastest and longest wireless transmission we've seen. The router provides a speed boost to all devices on the network. The management interface is one of the easiest we've used, and the router is very well priced. An excellent choice.

SPECIFICATIONS 802.11g wireless router (125Mbit/s turbo mode), four-port Ethernet switch, ADOSS. Part code WHR-HP-G54



REVIEW ETHERNET CONVERTER

BUFFALO HighPower Wireless Ethernet Converter

RATING ★★★★★

PRICE £47 inc VAT

SUPPLIER www.broadbandstuff.co.uk

DETAILS www.buffalo-technology.com

Wireless networks work well with PCs and notebooks because it's easy to buy a network adaptor for them, but what about printers and games consoles? Buffalo's HighPower Ethernet Converter aims to cater for these devices.

Just plug up to four Ethernet devices into the ports on the back, and they'll be converted to a wireless signal that talks to your router. It's ideal when you have a room with one or more devices, such as a console or media receiver, that you want to connect to the network.

The Ethernet Converter is part of Buffalo's HighPower range and uses the same chassis as the router (see below left), but its WAN port is blocked. It has the same powerful radio transmitter, though, which improves signal quality and transfer speeds.

It has to be configured to join an existing wireless network, just like any other wireless client. If you're using Buffalo kit, just press the AOSS button and it's done automatically. If you're not, you'll have to turn to the web-based management.



It's harder to configure than on a router, but the detailed instructions are easy to follow. Once into the management screen, you first have to enter the network name. You can do it manually, or have the Ethernet Converter scan for networks and pick one from the list.

Next you have to choose the level of security and enter the key. It supports WEP and WPA-PSK but the choices can be a bit confusing, as you have to choose between TKIP and AES for WPA-PSK. It means going back to your router's settings to confirm which form of encryption you are using.

We tested by connecting to a standard 802.11g 54Mbit/s wireless network. At close range we recorded 17.52Mbit/s, while 10m away it achieved 14.22Mbit/s. These scores are excellent for an 802.11g 54Mbit/s network and comparable to the scores we saw with Buffalo's HighPower PC Card adaptor.

This is another great product in the HighPower range, though a wizard-based setup that configures security settings would help make it easier to install.

David Ludlow

✓ Fast network transfer; supports four devices

✗ Can be tricky to configure

SPECIFICATIONS 802.11g WiFi (125Mbit/s turbo mode) adaptor, four Ethernet ports, supports WPA and WEP encryption. Part code WLI-TX4-G54HP

REVIEW POWERLINE NETWORKING

DEVOLO MicroLink dLAN Hightspeed Starter Kit

RATING ★★★★★

PRICE £115 inc VAT

SUPPLIER www.nickknows.com

DETAILS www.devolo.co.uk

Wireless networking can be a pain to get working and, in some houses, plain impossible. Powerline networking, where you use your house's mains power cables for a network, is an attractive option.

Previous kit we've reviewed has run at a paltry 14Mbit/s. Devolo's new Hightspeed Kit brings this up to a maximum 85Mbit/s. The Starter Kit, reviewed here, comes with two Powerline network adaptors, which connect to a standard three-pin mains plug; you just connect your PC and ADSL modem, for example, to the adaptors' Ethernet ports.

We tested the kit using the test we employ for wireless networks. The quoted network speed is more a theoretical limit than a real transfer speed. Even so, the 19.8Mbit/s transfer rate we recorded was the equal of most wireless products and fine for streaming music and compressed video. The quality of your home's wiring and the number of sockets will affect performance and range, though.

You can add additional adaptors into the network for extra computers; these are £61 each.



The Hightspeed Kit is backwards-compatible with the old 14Mbit/s standard, so you needn't throw away any existing Devolo network adaptors.

The Hightspeed adaptors work out of the box. The easy-to-use bundled software, with a clean graphical interface, takes care of security. Once you've entered the supplied security information you can group your adaptors into one network, which is encrypted. Devolo's file-sharing application is also included; Windows has this functionality built in, though, so we see little need for this utility.

This kit is a good alternative for homes where wireless won't work, but you will still need a broadband router to share an internet connection.

David Ludlow

✓ Quick; easy to configure

✗ Quite expensive

SPECIFICATIONS Two dLAN network adaptors, 85Mbit/s transfer rate. Part code 41616/0405